

# MAXIMUM ATRIAL TRACKING RATE FOR CARDIAC RHYTHM MANAGEMENT SYSTEM

## Abstract

5 A cardiac rhythm management system includes an operational mode in  
which ventricular pacing pulses are delivered at a rate that tracks a sinoatrial rate up  
to an appropriate maximum atrial tracking rate (MATR) value determined by the  
10 system. In one example, the MATR value is based on a patient activity level and a  
hemodynamic maximum rate (HMR) determined from a QRS-to-S<sub>2</sub> interval, where  
S<sub>2</sub> is an accelerometer-generated fiducial correlative to aortic valve closure (AVC).  
In a further example, a correlation between the QRS-to-S<sub>2</sub> interval and heart rate is  
established, and the MATR is based on the patient activity level and heart rate. In a  
15 further example, a lower rate threshold for providing antitachyarrhythmia therapy is  
modified based on the MATR. For example, when the MATR exceeds a default  
value of the antitachyarrhythmia therapy lower rate threshold, the threshold tracks  
the MATR. In another example, the MATR is based on an active time between a  
QRS complex and a heart impedance signal maximum slope during the same cardiac  
cycle.

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